

**CLAIMS:**

What is claimed is:

1. A polymerization process, comprising:  
providing a polymerization reactor that includes a first catalyst system;  
contacting olefin monomers with the first catalyst system to form polyolefin in a first polymerization reaction;  
introducing a catalyst killer to the polymerization reactor in an amount sufficient to terminate the first polymerization reaction;  
introducing a second catalyst system to the polymerization reactor in the presence of at least a portion of the catalyst killer, wherein the at least a portion of the catalyst killer is an amount sufficient to activate the second catalyst system; and  
contacting olefin monomers with the second catalyst system to form polyolefin in a second polymerization reaction.
2. The process of claim 1, wherein the catalyst killer comprises water.
3. The process of claim 1, wherein the first catalyst system comprises one or more chromium catalysts.
4. The process of claim 1, wherein the second catalyst system comprises a Ziegler-Natta catalyst system, a metallocene catalyst system, a bimetallic catalyst system, a multi-catalyst system, or any combination thereof.
5. The process of claim 1, wherein the second catalyst system is a bimetallic catalyst system comprising a non-metallocene catalyst component and a metallocene catalyst component.
6. The process of claim 1, wherein the amount sufficient to terminate the first polymerization reaction is greater than the amount sufficient to activate the second catalyst system.

7. The process of claim 1, wherein the amount sufficient to terminate the first polymerization reaction is at least 30 percent more than the amount sufficient to activate the second catalyst system.
8. The process of claim 1, further comprising introducing an activator compound to the polymerization reactor prior to introducing the second catalyst system to the polymerization reactor.
9. The process of claim 1, further comprising introducing an activator compound to the polymerization reactor prior to introducing the second catalyst system to the polymerization reactor, wherein the activator compound is an aluminum alkyl compound.
10. The process of claim 1, further comprising introducing an activator compound to the polymerization reactor prior to introducing the second catalyst system to the polymerization reactor, wherein the activator compound is selected from the group consisting of trimethylaluminum, triethylaluminum, triisobutylaluminum and diethylaluminum chloride.
11. A process of introducing a bimetallic catalyst system to a polymerization reactor, comprising:
  - introducing water into the polymerization reactor at a rate sufficient to provide a first water concentration, the first water concentration being sufficient to terminate a polymerization reaction catalyzed by a first catalyst system;
  - adjusting the first water concentration to a second water concentration, the second water concentration being an amount sufficient to activate the bimetallic catalyst system;
  - and
  - introducing the bimetallic catalyst system to the polymerization reactor.
12. The process of claim 11, wherein the bimetallic catalyst system comprises at least one non-metallocene catalyst component and at least one metallocene catalyst component.
13. The process of claim 11, wherein the bimetallic compound comprises a fluorinated catalyst.

14. The process of claim 11, wherein the first catalyst system comprises one or more chromium catalysts.
15. The process of claim 11, wherein adjusting the first water concentration to a second water concentration comprises reducing the first water concentration of 15 ppm to a second water concentration of 10 ppm using an alkyl aluminum scavenger.
16. The process of claim 11, wherein adjusting the first water concentration to a second water concentration comprises reducing the first water concentration by at least 30 percent.
17. The process of claim 11, wherein the water amount sufficient to activate a bimetallic catalyst system is at least 10 ppm.
18. The process of claim 11, further comprising introducing an organometallic compound to the polymerization reactor in an amount sufficient to activate at least a portion of the bimetallic catalyst system.
19. The process of claim 11, further comprising introducing trimethylaluminum to the polymerization reactor in an amount sufficient to activate at least a portion of the bimetallic catalyst system.
20. A process of transitioning a first catalyst system to a second catalyst system within a gas phase polymerization reactor, comprising:
  - contacting one or more olefin monomers with the first catalyst system to polymerize the one or more olefin monomers and form polyolefin;
  - introducing water into the gas phase polymerization reactor to create a water concentration sufficient to terminate the first catalyst system;
  - introducing an organometallic compound to the polymerization reactor in the presence of the water, the water having a concentration sufficient to activate at least a portion of the second catalyst compound; and then
  - introducing the second catalyst system to the gas phase polymerization reactor.

21. The process of claim 20, wherein the water concentration sufficient to terminate the first catalyst system is at least 15 ppm.
22. The process of claim 20, further comprising reducing the water concentration to a level sufficient to activate the second catalyst system.
23. The process of claim 22, wherein the water concentration sufficient to activate the second catalyst system is at least 5 ppm.
24. The process of claim 22, wherein the water concentration sufficient to terminate the first catalyst system is at least 30 percent more than the concentration sufficient to activate the second catalyst system.
25. The process of claim 20, wherein the first catalyst system comprises one or more chromium catalysts.
26. The process of claim 20, wherein the second catalyst system comprises a Ziegler-Natta catalyst system, a metallocene catalyst system, a bimetallic catalyst system, a multi-catalyst system, or any combination thereof.
27. The process of claim 20, wherein the second catalyst system is a bimetallic catalyst system.
28. The process of claim 20, wherein the bimetallic catalyst system comprises at least one non-metallocene catalyst component and at least one metallocene catalyst component.
29. The process of claim 20, wherein the bimetallic compound comprises a fluorinated metallocene catalyst component.
30. The process of claim 20, wherein the organometallic compound comprises trimethylaluminum.